



## West Nile Virus Newsletter

This is an electronic publication designed to keep you informed on issues of interest related to West Nile virus (WNV) in Washington, and provide current information to assist you in developing a response plan to WNV in your jurisdiction.

### Surveillance News

Two hundred fifty-two birds from 35 counties have been tested to date with no positive findings. Our neighbors to the north in British Columbia have tested 799 birds with no positives. The expansion of mosquito surveillance is resulting in much better coverage statewide than in previous years. This will help define locations for a possible mosquito pool testing project later this summer as well as providing valuable information on locations of the primary WNV vector species.

### Permit Update

Fourty-four entities have received coverage under the department's NPDES permit. They include ten cities, five county agencies, eight mosquito control districts, two state agencies, two school districts, one port district, and 16 private parties. Some targeted larviciding activity focused on stormwater facilities has begun in several counties.

### Mosquito Focus – *Coquilleltidia perturbans*

*Coquilleltidia perturbans* is a species found in marshes, ponds, and lakes that have a thick growth of aquatic vegetation. They are frequently found in stormwater ponds containing cattails or other vegetation. Eggs are laid in rafts on the water surface and the emerging larvae then attach to the stems and roots of vegetation by means of a modified air tube. They remain there throughout development and the pupae only surface when they are ready to emerge as adults. The larvae can quickly remove themselves from the host plant when disturbed and seek shelter at the bottom. The species can overwinter in the larval stage. *Coquilleltidia perturbans* is a fierce biter, active primarily in the evening, but will bite during the day as well. They feed readily on birds, humans, and other mammals and have been shown to transmit Eastern Equine Encephalitis. The species is also on the list of potential WNV vectors.



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## Local Health Focus – Tacoma-Pierce County Health Department

Submitted by Nedda Turner, Tacoma-Pierce County Health Department

The Tacoma-Pierce County Health Department has been working to keep up with the public's concern regarding WNV. Efforts have been focused on surveillance, public education, and coordination with local governments throughout Pierce County.

Surveillance includes both mosquito and dead bird surveillance. As of July 1, 2003, larvae and adult mosquitoes have been collected at 66 locations. Pierce County Public Works and many of the municipalities within Pierce County are also conducting mosquito surveillance. Recently, mosquito larvae collected from tires on the east side of Pierce County were identified as *Ochlerotatus japonicus*. Until then, that species had only been identified in King County. This demonstrates that the mosquitoes are multiplying and entering new areas.

As of July 1, 2003, 52 birds have been submitted for testing. Recently in one week, 18 birds were submitted for testing. DOH has since requested that we prioritize our birds for testing and limit the number to ten per week. This will be accomplished by selecting samples that give the best geographic representation for Pierce County.

Public education efforts are a very important piece of the program. Two brochures and a refrigerator magnet advertising a 24-hour WNV Hot Line number have been distributed. Presentations have been made to a variety of groups, including Pierce County Council, Kiwanis, city employees, and neighborhood groups to mention a few. The department has also participated in two cable television programs that were broadcast in May 2003. In addition, a WNV display board was developed and has been used at several fairs and festivals. The department is using every opportunity possible to get WNV information out to the public.

At the beginning of the year the department initiated an effort to coordinate WNV activities in Pierce County. A meeting notice went out to Pierce County agencies, Ft. Lewis, and every municipality in the county, inviting participation in a WNV discussion group. The purpose of the meeting was to share information and discuss WNV concerns. The meeting has evolved over the months and has served as a good forum to discuss current activities related to WNV.

Lastly, on June 25, the Tacoma-Pierce County Health Department hosted a WNV Workshop with a focus on mosquito control. About 90 people attended with representatives from Skagit, Snohomish, King, Kitsap, Thurston, Clallam, Grays Harbor, Cowlitz, and Mason Counties. The speakers were excellent and everyone came away learning something new. The department may host a similar event next year.

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## Using Weather as a Predictor of West Nile virus Activity

Scientists at Cornell University will be working toward development of an early warning system for WNV based on local climate information. They will spend the summer collecting data in areas where disease-carrying mosquitoes are found and hope to develop a "degree-day calculator" that warns public health officials when, where, and under what conditions infectious mosquitoes thrive or die. The information is expected to be on line by next summer.

“Scientists, whether they are climatologists or medical entomologists, have never fully examined the relationship between climate and the proliferation of the mosquitoes that carry WNV,” says Arthur T. DeGaetano, Cornell associate professor of climatology and director of the NRCC, is one of the principal investigators on the project. “Cornell’s College of Agriculture and Life Sciences is unique in that collaborations like this are very possible. Interaction between climatologists and medical entomologists can be at a level where information -- once it is gathered and processed -- can be readily employed in vector management schemes,” he says.

The research, funded by the National Oceanic and Atmospheric Administration, will occur in four stages. First, climatologists and entomologists will gather climate data and synchronize this with mosquito habitat observations. This data will then be related to mosquito-count information through statistical analysis for mapping and graphing. From this information, indices will be developed for moisture surpluses, degree day-based mosquito development, and killing freezes. Finally, all this data will be put on the Web for public health officials' use.

Mosquitoes develop in microhabitats, according to Laura Harrington, Cornell assistant professor of entomology and a co-principal investigator on the project. The correlation of climate data with microhabitat information will provide scientific clues to how mosquito populations develop and age. Older mosquitoes are the carriers of WNV, becoming contaminated when they feed on infected “reservoir” animals such as birds, and undergo an incubation period of the virus that can last 7-14 days. During subsequent blood meals after this incubation period, the mosquitoes inject the virus into humans and animals, where it can multiply and sometimes cause illness. It is outdoor temperatures that determine both the rate at which the virus replicates and the rate at which mosquitoes age.

While mosquitoes can live as long as three to four months in a laboratory, their life span in the wild is much shorter. Thanks to predators and pathogens, the longest a mosquito can live is probably three to four weeks, says Harrington. During the height of summer heat, a mosquito can age and become a full adult within seven to nine days.

The study also will gather information on early establishment and climate-influenced development of mosquitoes carrying WNV in specialized habitats such as discarded tires and other types of containers that tend to be located close to human dwellings.

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## Federal Legislation Proposed on Mosquito Abatement

The House and Senate have passed two measures dealing with mosquito control recently. Both entitled “The Mosquito Abatement for Safety and Health Act” would authorize grants through the Centers for Disease Control and Prevention for mosquito control programs at the state or local level. The Senate measure is S 1015 and the measure that passed the House is HR 342. We will keep you posted on the status of these proposals.

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## Article Submission

We are interested in receiving articles for future publications of the WNV newsletter. Please submit articles to Jack Lilja, [jack.lilja@doh.wa.gov](mailto:jack.lilja@doh.wa.gov).

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## Community Comments

Let us hear your comments on this newsletter, your needs, or things you would like to see, by sending them to Maryanne Guichard, (360) 236-3391 or [maryanne.guichard@doh.wa.gov](mailto:maryanne.guichard@doh.wa.gov).

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## WNV Web Resources

Washington State Department of Health [www.doh.wa.gov/wnv](http://www.doh.wa.gov/wnv)  
Center for Disease Control <http://www.cdc.gov/ncidod/dvbid/westnile/>  
Washington State University Cooperative Extension <http://wnv.wsu.edu/>  
Cornell University, Center for Environment <http://www.cfe.cornell.edu/erap/WNV>

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## DOH Contact List for West Nile Virus

### General Public Toll-Free Hotline 1-866-78VIRUS

#### **Publications: Brochures/Response Plan/Fact Sheets**

Laura Harper, (360) 236-3380, or [laura.harper@doh.wa.gov](mailto:laura.harper@doh.wa.gov).

#### **Surveillance: Mosquito**

Jo Marie Brauner, (360) 236-3064, or [jomarie.brauner@doh.wa.gov](mailto:jomarie.brauner@doh.wa.gov).

#### **Surveillance: Dead bird surveillance and general WNV response**

Tom Gibbs, (360) 236-3060, or [tom.gibbs@doh.wa.gov](mailto:tom.gibbs@doh.wa.gov).

#### **Surveillance: Horses, case reporting, laboratory assistance**

Dr. John Grendon, (360) 236-3362, or [john.grendon@doh.wa.gov](mailto:john.grendon@doh.wa.gov).

#### **NPDES: Training, technical assistance**

Ben Hamilton, (360) 236-3364, or [benjamin.hamilton@doh.wa.gov](mailto:benjamin.hamilton@doh.wa.gov).

#### **WNV in Humans: Clinical information, case reporting, and laboratory testing**

Call your local health jurisdiction or DOH Communicable Disease Epidemiology,  
(206) 361-2914 or (877) 539-4344.

#### **Assistance with news releases and media response**

Donn Moyer, (360) 236-4076, or [donn.moyer@doh.wa.gov](mailto:donn.moyer@doh.wa.gov).

Tim Church, (360) 236-4077, or [tim.church@doh.wa.gov](mailto:tim.church@doh.wa.gov).

#### **WNV Program Management**

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#### **WNV Coordinator**

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#### **To subscribe to this newsletter**

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